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10 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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12 TITLE: MALE URINARY SYSTEM

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2 BACKGROUND OF THE INVENTION

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5 1. Field of The Invention

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8 The present invention relates to devices and apparatuses
9 for assisting males in urination.

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12 2. Background Information

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15 Urination can be difficult, messy, and (under
16 circumstances requiring assistance) embarrassing when one
17 cannot use a conventional toilet facility in the conventional
18 manner. All of these factors are greatly amplified when the
19 individual is, for example, a male in his teens, who is bed-
20 ridden because of an accident and is tended (as still is
21 normally the case) by female care givers.

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23 The subject invention arose from a situation involving a
boy in his early teens who, after a tragic accident, was bed
ridden in a body cast for an extended period of time. For a
time, urination was something he avoided until he could avoid
it no longer. Having to receive assistance from his female
relatives (the only ones usually available for his care) was
excruciatingly embarrassing for this young patient.

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25 The boys parents looked in vane for some device or system
which would allow their son to urinate without direct

1 assistance. Nothing effective could be found, even when
2 involving the resources and ideas of fellow staff members at
3 the hospital where the boy's mother (and the present inventor)
4 worked.

5 The primary problem thus far unaddressed by the urinary
6 devices and systems of the prior art relate to allowing a boy
7 or man to urinate while lying substantially on his back, but
8 without having any back flow through whatever tubing or
9 conduit is involved in receiving the urine. Of course, the
10 use of conventional bed pans is virtually out of the question
11 for such a patient, so literal ability to use is beyond the
12 realm of a mere "problem" with such conventional approaches.

13 Additional deficiencies in the prior art devices and
14 systems relate to ease of managing the collection and disposal
15 of urine. Male urinals, as they are known, are usually
16 unitary structures which, essentially, are receptacles with an
17 opening (sometimes with a short conduit extending from one
18 margin). Therefore contrary to OSHA and other applicable
19 regulations, the urinal is often placed on a nearby table, or
20 on the bed beside the patient immediately after use.

21 In addition, the bulk of such devices as were just
22 described is such that they cannot be maneuvered into place
23 when dealing with restrictive casts, braces, etc. Situations

1 such as this often require that a patient resort to the use of
2 adult diapers.

3 It would be highly beneficial, and, not to exaggerate to
4 any real degree, outright humane to provide an improved male
5 urinary device or system which allowed a male patient to
6 urinate without assistance, to provide for effective
7 collection of urine without significant back flow, to address
8 the objective of collecting urine remotely from the patient,
9 table surfaces or the bed itself.

10 SUMMARY OF THE INVENTION

11 In view of the foregoing, it is an object of the present
12 invention to provide an improved male urinary assistance
13 device.

14 It is an object of the present invention to provide an
15 improved male urinary assistance device, which allows use by
16 prone patients without significant backflow during or after
17 use.

18 It is an object of the present invention to provide an
19 improved male urinary assistance device, which is configured
20 for maneuvering the actual penis/collection system interface
21 into tight spaces created by casts, braces, and the like, by
22 separating the collection receptacle from the interface.

1 It is an object of the present invention to provide an
2 improved male urinary assistance device, which includes a
3 collection receptacle separate from the penis/collection
4 system interface, thereby obviating the need to place the
5 receptacle on table top or bed surfaces during or after use.

6 It is an object of the present invention to provide an
7 improved male urinary assistance device, which is easily used
8 by persons which neural motor control disorders.

9 In satisfaction of these and related objects, the present
10 invention provides an improved male urinary system which, at
11 its heart, includes a penis/urinary collection interface unit
12 of a design which both collects urine without significant
13 backflow during or after use and is sized and shaped for easy
14 maneuvering into position, even when encountering restrictive
15 spaces caused by body casts, braces, etc. Because the
16 penis/urinary collection interface unit does not itself serve
17 as the urine collection receptacle, but is merely in fluid
18 communication therewith by a length of conduit, the collected
19 urine will, if the system is used as intended, sit safely at
20 a distance on the floor next to the patient's bed, or
21 suspended from a hanging device or bracket attached to the
22 patient's bed.

1 Because the present system is modular in nature, with
2 varying configurations for users with differing needs, the
3 system is easily modified to an almost "custom" design level.

4 The present designs are of relatively inexpensive,
5 disposable plastic construction, and are, therefore,
6 economical to provide to patients.

7 In addition to the medical uses described above, the
8 present system can also have considerable utility for airplane
9 pilots who, for lack of restroom facilities on-board, or
10 because of recent security rules which prevent pilot egress
11 from the cockpit, can benefit from the considerable ease of
12 use of this urinary system in the tight confines of an
13 aircraft cockpit. Much the same is true of long-haul truck
14 drivers who prefer not to stop driving, until or unless it is
15 absolutely necessary.

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17 BRIEF DESCRIPTION OF THE DRAWINGS

18 Fig. 1 is a perspective view of a first embodiment of the
19 penis/urinary collection interface unit of the present system.

20 Fig. 2 is a perspective view of an alternative embodiment
21 of the penis/urinary collection interface unit of the present
22 invention, one designed for use by patients in a predominantly
23 supine position.

1 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

2 Referring to figure 1, the penis/urinary collection
3 interface unit of the present invention is identified by the
4 reference numeral 10. While variations on the construction
5 details will be apparent to persons reasonably skilled in the
6 design and construction of plastic articles, any penis/urinary
7 collection interface unit 10 within the present invention will
8 include a primary receiver unit 12, and a secondary
9 containment unit 14. Primary receiver unit 12 is contoured at
10 its proximal end 16 for receiving the penis of a user, and
11 when pressed into position, to accommodate the nearby scrotal
12 structure.

13 At least a portion of the primary receiver unit is, in
14 the preferred embodiment, nested within the secondary
15 containment unit 14. At the distal end 18 of the primary
16 receiver unit 12, the primary receiver unit narrows to allow
17 a gap 20 between the outer surface of of primary receiver unit
18 12 and the inner surface of secondary containment unit 14.

19 The gap is preferentially oriented where it will be in
20 the most downward position when positioned as is expected
21 during normal use (that is, with the enlarged, proximal
22 portion of the primary receiver unit in position for
23 accommodating the scrotum). As will be apparent from an

1 examination of Fig. 1, because the margins of primary receiver
2 unit 12 and secondary containment unit 14 are fused, urine,
3 collected in gap 20, cannot spill from penis/urinary
4 collection interface unit 10 (unless it fills to a point of
5 overflowing -- not something which was experienced in
6 prototype tests).

7 The structure of penis/urinary collection interface unit
8 10 is such that, even when used by a man or boy lying on his
9 back, urine is projected against the upper wall 22 of primary
10 receiver unit 12, is diverted toward the distal terminus 24 of
11 secondary containment unit 14 and flows out of penis/urinary
12 collection interface unit 10 into a conduit 26 which is in
13 sealed fluid communication with penis/urinary collection
14 interface unit 10. Any urine that does not reach and travel
15 through the distal terminus 24 of penis/urinary collection
16 interface unit 10 is harmlessly collected in gap 20 as
17 described above.

18 In certain embodiments of the present invention, the
19 proximal margin 28 of primary receiver unit 12 is contoured so
20 as not to present a sharp edge to the user. In the
21 alternative, a soft, gasket-like material can be fitted to the
22 margin, both to insure comfort of use, and to provide
23 something of a fluid seal.

1 The embodiment of penis/urinary collection interface unit
2 10 shown in Fig. 1 has been shown adequate for patients who
3 are either standing or sitting. The version shown in Fig. 2
4 involves relative orientation of primary receiver unit 12 and
5 secondary containment unit 14 such that urine of most
6 effectively collected and back flow minimized.

7 To provide the most spill-free use possible, all
8 preferred embodiments of the 'present' male urinary system
9 include snap-fit lids 30 which close and substantially seal
10 the penis/urinary collection interface unit 10 between uses.

11 Conduit 26, as already shown, attaches, at its proximal
12 end, to the distal end of penis/urinary collection interface
13 unit 10. The distal end of conduit 26 (not shown in the
14 drawings) extends to a collection receptacle (not shown in the
15 drawings) which will be, in any preferred embodiment, easily
16 disconnected from conduit 26 for disposal of collected urine.
17 The design and structure of such a receptacle can be quite
18 varied, the most significant feature simply being its
19 remoteness from the patient and the surrounding surfaces of
20 sanitary concern.

21 Although the invention has been described with reference
22 to specific embodiments, this description is not meant to be
23 construed in a limited sense. Various modifications of the

1 disclosed embodiments, as well as alternative embodiments of
2 the inventions will become apparent to persons skilled in the
3 art upon the reference to the description of the invention.
4 It is, therefore, contemplated that the appended claims will
5 cover such modifications that fall within the scope of the
6 invention.

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